

WHAT IS CLAIMED IS:

1. A method of communication between wireline downhole tools comprising:
examining an uplink data stream ; and
extracting any data intended for downhole tools.
2. The method of claim 1 where a downhole module performs the step of examining the uplink data stream.
3. The method of claim 1, further comprising transmitting via a downlink data stream to an intended downhole tool data extracted from the uplink data stream.
4. The method of claim 3, wherein the data intended for downhole tools does not require transmission to the surface before it is sent downhole.
5. The method of claim 1, further comprising transmitting any data intended for downhole tools via a downlink data stream to a group of downhole tools.
6. The method of claim 1, further comprising broadcasting any data intended for downhole tools via a downlink data stream to all downhole tools.
7. The method of claim 1, wherein the data intended for downhole tools comprises a command to fire sent from a downhole acoustic receiver and intended for a downhole acoustic transmitter.
8. The method of claim 7, wherein the downhole acoustic transmitter starts firing, and the receiver starts data acquisition in sync with the firing of the transmitter following receipt of the command by the transmitter and receiver.

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9. The method of claim 1, wherein the data intended for downhole tools comprises borehole diameter information transmitted by a caliper.
10. The method of claim 9, wherein a downhole module extracts the borehole diameter information from the uplink data stream and copies it to a downlink data stream.
11. The method of claim 10, wherein the borehole diameter information is sent to a sonic transmitter via the downhole module without returning to the surface.
12. The method of claim 2, wherein the downhole module is a downhole telemetry cartridge comprising a downhole toolbus controller; a downhole device comprising a software enhanced toolbus interface (SEBI); or a downhole device comprising an extended toolbus interface (XBI).
13. The method of claim 12, wherein the downhole device is a borehole tool.
14. A downhole data acquisition system comprising:
 - a surface telemetry system;
 - a downhole telemetry cartridge comprising a downhole toolbus controller; and
 - a plurality of downhole tools;wherein the downhole toolbus controller is programmed to extract uplink ITC data.
15. The system of claim 14, wherein the downhole toolbus controller is programmed to copy extracted ITC data to a downlink data stream.
16. The system of claim 15, wherein the downlink data stream provides the extracted ITC data to one or more of the plurality of downhole tools.
17. The system of claim 14, wherein one of the plurality of downhole tools comprises a sonic receiver, and another of the plurality of downhole tools comprises a sonic transmitter.

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18. The system of claim 16, wherein a firing signal is sent from the sonic receiver, extracted from an uplink data stream by the downhole toolbus controller, and sent to the sonic transmitter.
19. The system of claim 18, wherein the firing signal is also sent to the sonic receiver and the firing of the sonic transmitter and the receiving of the sonic receiver is synchronized by the extracted firing signal.
20. The system of claim 14, wherein one of the plurality of downhole tools comprises a caliper.
21. The system of claim 20, wherein borehole diameter information is sent from the caliper, extracted from an uplink data stream by the downhole toolbus controller, and sent to the sonic transmitter.
22. A method of acquiring acoustic data comprising:
 - sending a firing signal uphole;
 - extracting the firing signal with a downhole module as the firing signal goes uphole;
 - copying the firing signal and sending it downhole to an acoustic transmitter; and
 - firing the acoustic tool according to the firing signal.
23. The method of claim 22, further comprising synchronizing acquisition of sonic data with the firing of the acoustic tool using the extracted firing signal.
24. The method of claim 22, wherein the sending of a firing signal is done by an acoustic receiver.
25. The method of claim 22, further comprising extracting a caliper data signal with the downhole module and copying the caliper data signal with high priority to a downlink data

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stream.

26. The method of claim 25, wherein the caliper data signal is provided to an acoustic transmitter.
27. A method of communicating between wireline downhole tools comprising:
examining an uplink data stream with a downhole module;
extracting any data intended for downhole tools with the downhole module; and
sending any data extracted to one or more downhole tools via the downhole module.
28. The method of claim 27, wherein the data extracted is sent to the one or more downhole tools along a downlink data stream during a subsequent downlink period.
29. The method of claim 27, wherein the uplink data stream comprises a command to fire sent from a downhole acoustic receiver and intended for a downhole acoustic transmitter.
30. The method of claim 29, further comprising synchronizing downhole acoustic transmitter firing and downhole receiver data acquisition based on the command.
31. The method of claim 27, wherein the data intended for downhole tools comprises borehole diameter information transmitted by a caliper.
32. The method of claim 27, wherein the data intended for downhole tools comprises information transmitted to effect taking a fluid sample.
33. The method of claim 27, wherein the data intended for downhole tools comprises borehole diameter information transmitted to effect movement of a tool or tool string.
34. The method of claim 33, wherein the downhole module extracts the borehole diameter information from the uplink data stream and copies it to a downlink data stream.

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35. A method of communicating between downhole tools comprising:
sending a signal from a first downhole tool to a downhole module;
relaying the signal from the first downhole tool to a second downhole tool before the signal reaches a surface telemetry module.
36. The method of claim 35, wherein the relaying is done by the downhole module.
37. A method of communicating between downhole tools comprising:
sending a signal from a first downhole tool; and
intercepting the signal at a downhole module before the signal reaches a surface telemetry module.
38. The method of claim 37, wherein the signal is relayed by the downhole module to at least one downhole tool.
39. The method of claim 38, wherein the downhole module is a downhole telemetry cartridge comprising a downhole toolbus controller; a downhole device comprising a software enhanced toolbus interface (SEBI); or a downhole device comprising an extended toolbus interface (XBI).
40. A borehole telemetry system comprising a surface telemetry module, a downhole module, and a multiplexed data link between the surface module and the downhole module capable of transferring data alternately between an uplink in which data is transferred from the downhole module to the surface module and a downlink in which data is transferred from the surface module to the downhole module; wherein the uplink data can be examined and selectively extracted by the downhole module.
41. The system of claim 40, wherein the downhole module can extract any uplink data intended for downhole tools.

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- 42. The system of claim 40, wherein the downhole module can store and copy any uplink data extracted from the uplink to the downlink.
- 43. The system of claim 42, wherein any data extracted from the uplink by the downhole module is copied to the downlink at a subsequent downlink period and received by an intended downhole tool.
- 44. The system of claim 43, wherein any data extracted from the uplink by the downhole module is copied to the downlink at the subsequent downlink period and broadcast to a group of or all downhole tools.
- 45. The system of claim 40, wherein the data link is a wireline cable.
- 46. The system of claim 45, wherein the wireline cable extends between a plurality of downhole tools.
- 47. The system of claim 46 wherein the plurality of downhole tools comprise two or more of an acoustic receiver, an acoustic transmitter, a caliper, and a sampler.
- 48. The system of claim 40 wherein the downhole module is a downhole telemetry cartridge comprising a downhole toolbus controller; a downhole device comprising a software enhanced toolbus interface (SEBI); or a downhole device comprising an extended toolbus interface (XBI).